

Date: Fri, 07 Feb 2003 11:16:36 -0700
To: turner gene
From: Stephen Yanicak <syanicak@beasley.lanl.gov>
Subject: NMED Info for new spring in WRC CCNS Spring
Cc: stavert doug

Gene----

This information is now public and some parts will probably see some press/media action this weekend. -----*We have already reported much of this information in recent months, but this re-hash is provided just so you are clear on what we know about this spring.*

This information (DOE Oversight Bureau and LANL data) was electronically transmitted to DOE/LANL on December 18, 2002 (email w/attachment). I've also included it here again as attachment (EXCEL spreadsheet is LANL data, and PDF file is NMED data for CCNS/2B Spring).

Up-Date: New Spring named CCNS Spring (or 2-B):

The new spring (2B or CCNS Spring) was found by NMED staff in October 2002 while accompanying CCNS during part of their river trip down WR Canyon on the Rio Grande----the new spring was found along the west-side river bank below the WR Overlook, south of the Spring 2 series. Observations by NMED during two visits suggest that it discharges very close to normal river flow-level (stage) for autumn. Thus, it was overlooked in previous years. LANL WQH was invited by CCNS & NMED to attend each sampling event but declined participation. By request, we collected one round of water samples for LANL that were run at the EES analytical lab at TA-3. These data are reported in the EXCEL attachmant.

Chemistry runs by NMED show uranium at 17.9 ppb (filtered sample), gross alpha at 14.9 pCi/L (filtered sample), tritium at 10.79 pCi/L (U of Miami), and nitrate at 5.49 mg/L. No parameters currently found to exceed WQCC or EPA standards, but nitrate, uranium and gross alpha come in at more than half current standards, with uranium and gross alpha greater than 90%. See LANL's data for comparison (both data sets compare well). LANL CLO-4 (perchlorate) result is reported as no detect at or below 4 ppb (Method 314, IC). No NMED CLO-4 results are available yet from low-level detection method (LC/MS/MS).

CCNS Spring (2B) chemistry results, specifically nitrate and uranium, appear out of place when compared to other nearby White Rock Canyon springs that discharge from west side of Rio Grande. A search of LANL's ES database (past 30 years) failed to produce any White Rock Canyon springs on the west side of the Rio Grande that historically show similar chemistries with such high uranium and nitrate results. Also, CCNS Spring (2B) chemistry does not appear to match local waste water streams such as those coming from the White Rock sanitary treatment facility.

Offsite
CCNS Spring (Spring 2B, White Rock Canyon)




Note: In 1980, Purtymun reported a single uranium result of 20 ppb for an *east-side* spring (3B) collected during the early 60s (Spring 3B was verified to be dry in 1996 by Dale & Yanicak). Purtymun's uranium result for Spring 3B is supported by a more recent NMED study (McQuillan et al, 1998) that concludes high uranium in ground water (wells & springs etc.) is much more common in the Pojoaque Valley on the *east side of Rio Grande*.


NMED is currently working with LANL scientists to figure out CCNS Spring's (2B) potential source because any information of this kind is important for modeling the conceptual water model of the Pajarito Plateau. The team is also looking upstream at chemical trends in ground water from Los Alamos, Mortandad and Pajarito Canyons as likely/possible sources of this spring's discharge to the Rio Grande. At present, NMED cannot discount this finding (as well as other recent reports of perchlorate in west side springs) as very reliable evidence connecting known contaminated ground water under LANL as source waters for these *west side* springs.

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|  NMED-2.xls | Name: NMED-2.xls Type: EXCEL File (application/msexcel) Encoding: base64 |
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|  PRELIMNAMEDDATAFORSPRING2B.pdf | Name: PRELIMNAMEDDATAFORSPRING2B.pdf Type: Acrobat (application/pdf) Encoding: base64 |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|

[Fwd: Fwd: Yesterday's Spring Article in the SFNM]

Ralph Ford-Schmid <ralph_fordschmid@nmenv.state.nm.us>

Environmental Scientist & Specialist-O

DOE Oversight Bureau

New Mexico Environment Department

Certificate of Analysis

Company : Pinnacle Labs, Inc
Address : 2709D Pan American Freeway NE
Albuquerque, New Mexico 87107

Contact: Mitch Rubenstein
Project: PO# 211142

Report Date: December 16, 2002

Page 1 of 3

Client Sample ID: SPRING 2B-11-15-02/211142- Project: PINL02802
Sample ID: 71046001 Client ID: PINL001
Matrix: Water
Collect Date: 15-NOV-02 11:30
Receive Date: 21-NOV-02
Collector: Client

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | Method |
|---------------------------------------|-----------|--------|--------|-------|-------|----|---------|----------|------|--------|--------|
| Ion Chromatography Federal | | | | | | | | | | | |
| <i>EPA 300.0 Anions Liquid 28 day</i> | | | | | | | | | | | |
| Bromide | U | ND | 0.0978 | 0.200 | mg/L | 1 | MAR1 | 12/10/02 | 0724 | 219005 | 1 |
| Fluoride | | 0.352 | 0.0553 | 0.100 | mg/L | 1 | | | | | |
| Sulfate | | 23.7 | 0.193 | 0.400 | mg/L | 1 | | | | | |
| Chloride | | 31.4 | 0.161 | 1.00 | mg/L | 5 | MAR1 | 12/10/02 | 1759 | 219005 | 2 |
| Metals Analysis-ICP Federal | | | | | | | | | | | |
| <i>6010 TAL Metals Liquid Federal</i> | | | | | | | | | | | |
| Aluminum | U | ND | 14.7 | 100 | ug/L | 1 | HSC | 12/03/02 | 1722 | 218249 | 3 |
| Antimony | U | ND | 5.08 | 10.0 | ug/L | 1 | | | | | |
| Arsenic | U | ND | 2.24 | 5.00 | ug/L | 1 | | | | | |
| Barium | | 179 | 0.222 | 5.00 | ug/L | 1 | | | | | |
| Beryllium | U | ND | 0.158 | 5.00 | ug/L | 1 | | | | | |
| Cadmium | J | 0.634 | 0.313 | 5.00 | ug/L | 1 | | | | | |
| Calcium | | 62100 | 5.54 | 100 | ug/L | 1 | | | | | |
| Chromium | J | 2.61 | 0.503 | 5.00 | ug/L | 1 | | | | | |
| Cobalt | U | ND | 0.541 | 5.00 | ug/L | 1 | | | | | |
| Copper | U | ND | 1.39 | 5.00 | ug/L | 1 | | | | | |
| Iron | U | ND | 12.6 | 100 | ug/L | 1 | | | | | |
| Lead | U | ND | 1.72 | 5.00 | ug/L | 1 | | | | | |
| Magnesium | | 8140 | 5.18 | 100 | ug/L | 1 | | | | | |
| Manganese | J | 2.89 | 0.296 | 10.0 | ug/L | 1 | | | | | |
| Nickel | J | 1.52 | 0.690 | 5.00 | ug/L | 1 | | | | | |
| Potassium | | 4430 | 16.5 | 100 | ug/L | 1 | | | | | |
| Selenium | U | ND | 2.81 | 5.00 | ug/L | 1 | | | | | |
| Silver | U | ND | 0.835 | 5.00 | ug/L | 1 | | | | | |
| Sodium | | 36500 | 14.4 | 100 | ug/L | 1 | | | | | |
| Thallium | U | ND | 10.0 | 20.0 | ug/L | 1 | | | | | |
| Vanadium | | 9.79 | 0.606 | 5.00 | ug/L | 1 | | | | | |
| Zinc | U | ND | 0.883 | 5.00 | ug/L | 1 | | | | | |
| Metals Analysis-ICPMS Federal | | | | | | | | | | | |
| <i>3005/6020 Uranium Federal</i> | | | | | | | | | | | |
| Uranium | | 17.9 | 0.020 | 0.200 | ug/L | 1 | BAJ | 12/04/02 | 2052 | 218064 | 4 |
| Rad Gas Flow | | | | | | | | | | | |
| <i>GFPC, Sr90, liquid</i> | | | | | | | | | | | |
| Strontium-90 | U | ND | | 1.00 | pCi/L | | AS1 | 12/06/02 | 0628 | 218906 | 5 |
| GROSSAB | | | | | | | | | | | |
| Alpha | | 14.9 | | 5.00 | pCi/L | | PD | 12/04/02 | 2002 | 218846 | 6 |
| Beta | | 4.80 | | 5.00 | pCi/L | | | | | | |

Certificate of Analysis

Company : Pinnacle Labs, Inc
Address : 2709D Pan American Freeway NE
Albuquerque, New Mexico 87107

Contact: Mitch Rubenstein
Project: PO# 211142

Report Date: December 16, 2002

Page 2 of 3

Client Sample ID: SPRING 2B-11-15-02/211142- Project: PINL02802
Sample ID: 71046001 Client ID: PINL001

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | Method |
|-------------------------------------------------------|-----------|--------|--------|-------|-------|----|---------|----------|------|--------|--------|
| TRAACS Nutrient Analysis Fed | | | | | | | | | | | |
| EPA 365.4 Phosphorus, Total in Phosphorus, Total as P | | 0.0808 | 0.0162 | 0.050 | mg/L | 1 | THL | 12/03/02 | 1014 | 218572 | 7 |
| Nitrogen as Ammonia | | | | | | | | | | | |
| Nitrogen, Ammonia | U | ND | 0.024 | 0.050 | mg/L | 1 | THL | 12/03/02 | 1038 | 218576 | 8 |
| Nitrogen, (NO3/NO2) | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 5.49 | 0.030 | 0.150 | mg/L | 3 | THL | 12/05/02 | 1453 | 219256 | 9 |
| Nitrogen, Total Kjeldahl (TKN) | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.210 | 0.030 | 0.100 | mg/L | 1 | THL | 12/04/02 | 1126 | 218567 | 10 |
| Titration Analysis Federal | | | | | | | | | | | |
| SM 2320B Total Alkalinity Federal | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 166 | 1.45 | 2.00 | mg/L | | BEP2 | 11/26/02 | 0709 | 217976 | 11 |
| Bicarbonate alkalinity (CaCO3) | | 165 | 1.45 | 2.00 | mg/L | | | | | | |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 2.00 | mg/L | | | | | | |

The following Prep Methods were performed

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|------------------------------------------|---------|----------|------|------------|
| EPA 350.1 | EPA 350.1 Ammonia Nitrogen Liquid Federa | THL | 12/03/02 | 1038 | 218576 |
| EPA 350.2 Prep | EPA 350.1 Ammonia Nitrogen Prep | THL | 12/03/02 | 0744 | 218574 |
| EPA 351.2 | EPA 351.2 Total Kjeldahl Nitrogen Federa | THL | 12/04/02 | 1126 | 218567 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | SDS | 12/03/02 | 1441 | 218563 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid-Fe | SDS | 12/02/02 | 1457 | 218570 |
| SW846 3005A | ICP-MS 3005 PREP | CWS1 | 11/27/02 | 1630 | 218063 |
| SW846 3005A | ICP-TRACE SW846 3005A | CWS1 | 11/27/02 | 1630 | 218248 |

The following Analytical Methods were performed

| Method | Description | Analyst Comments |
|--------|--------------------|------------------|
| 1 | EPA 300.0 | |
| 2 | EPA 300.0 | |
| 3 | SW846 3005/6010B | |
| 4 | SW846 3005/6020 | |
| 5 | EPA 905.0 Modified | |
| 6 | EPA 900.0 | |
| 7 | EPA 365.4 | |
| 8 | EPA 350.1 | |
| 9 | EPA 353.1 | |

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Page 3 of 3

Client Sample ID: SPRING 2B-11-15-02/211142- Project: PINL02802
Sample ID: 71046001 Client ID: PINL001

| Parameter | Qualifier | Result | DL | RL | Units | DF | Analyst | Date | Time | Batch | Method |
|-----------|-----------|--------|----|----|-------|----|---------|------|------|-------|--------|
| 10 | EPA 351.2 | | | | | | | | | | |
| 11 | SM 2320B | | | | | | | | | | |

Notes:

The Qualifiers in this report are defined as follows :

- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- BD Flag for results below the MDC or a flag for low tracer recovery.
- E Concentration exceeds instrument calibration range
- H Holding time exceeded
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- P The response between the confirmation column and the primary column is >40%D
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package
- Y QC Samples were not spiked with this compound.

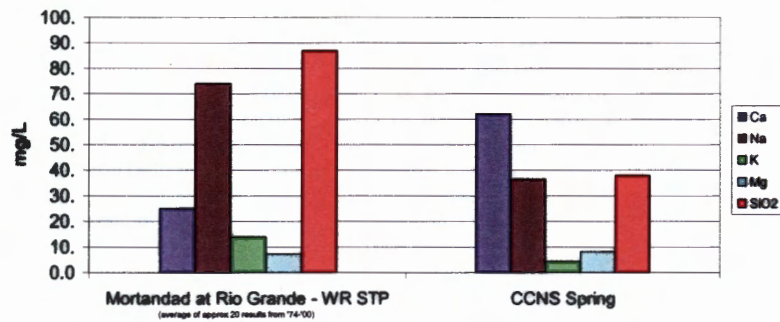
The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

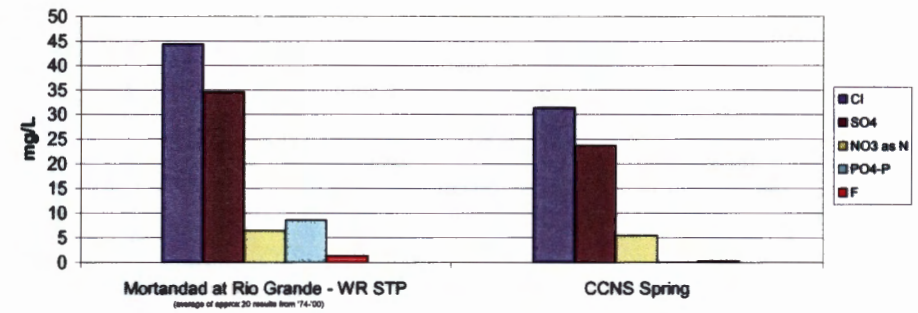
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Stacy Griffin.

Reviewed by _____

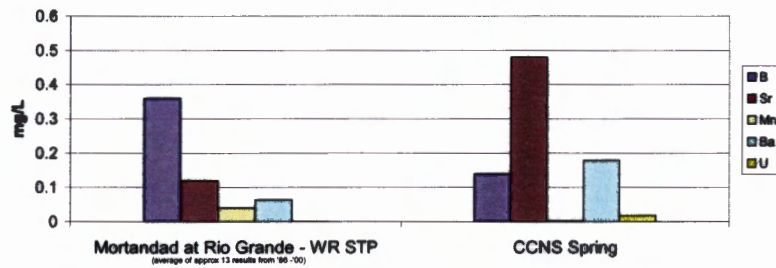
Cation/SiO₂ Comparison



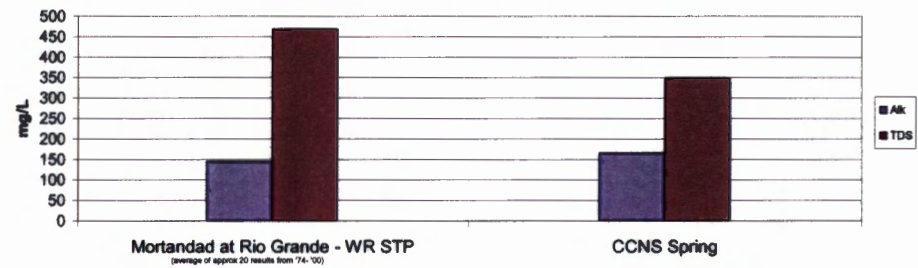
Anion Comparison

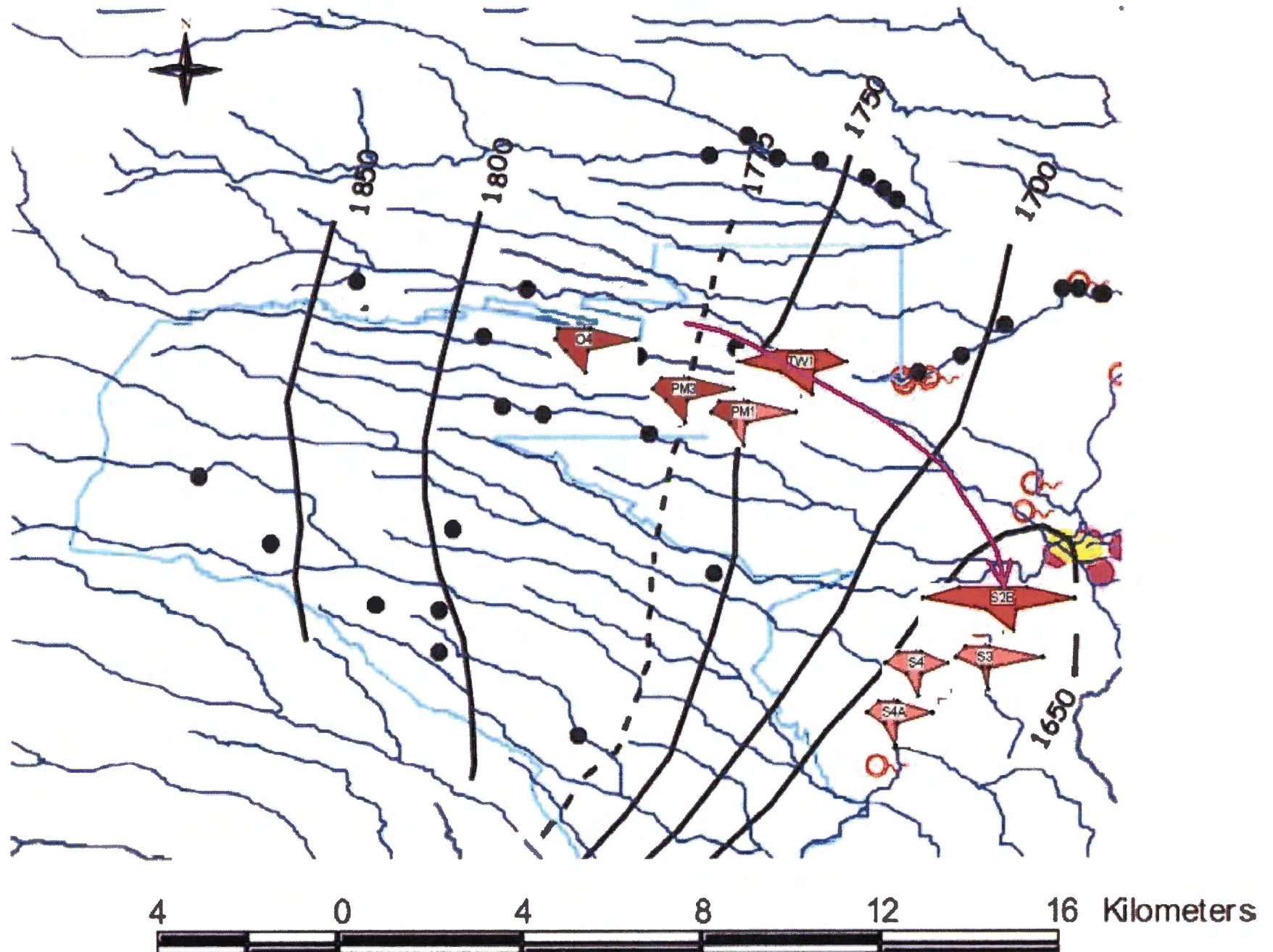


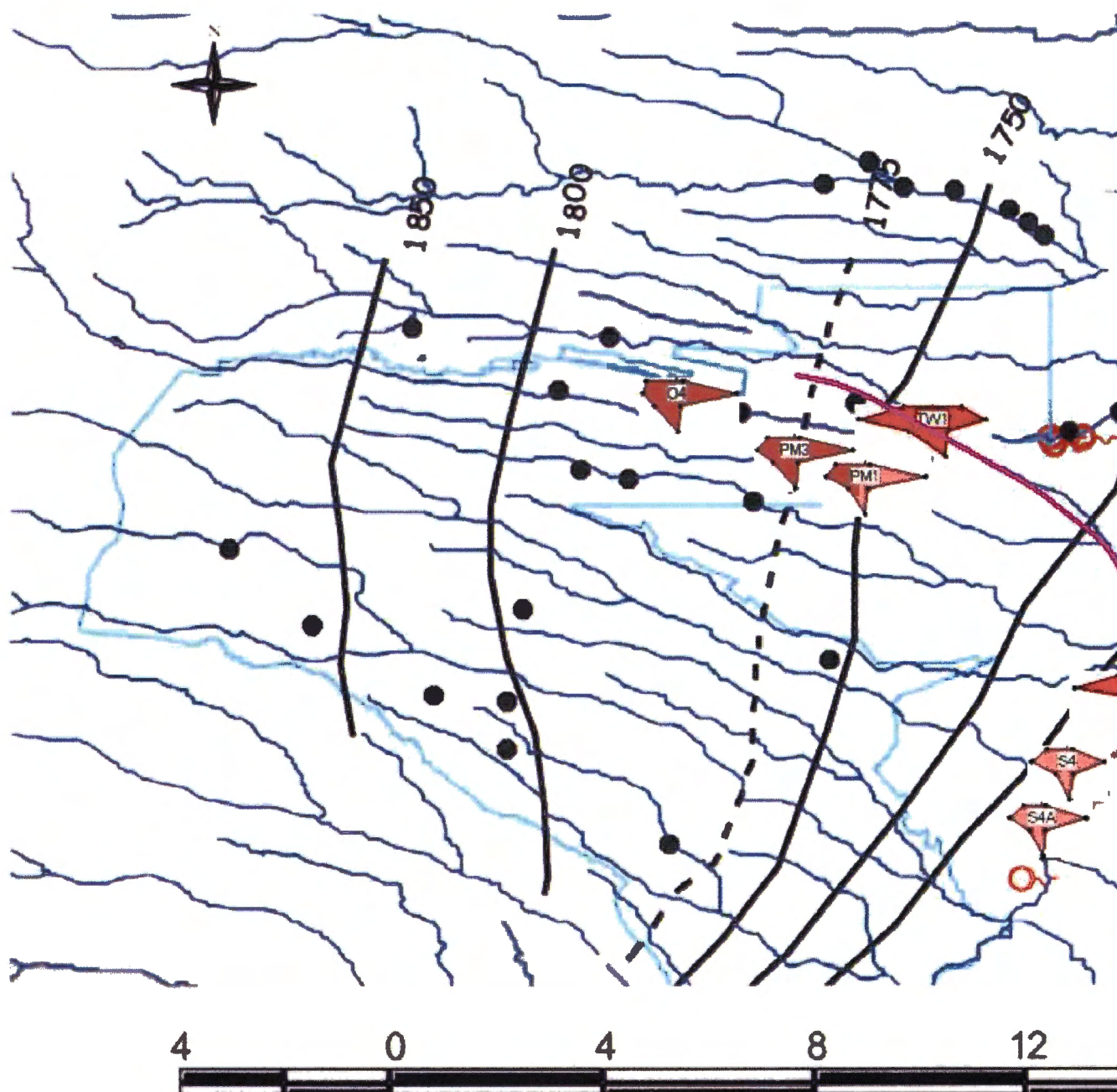
Trace Metal Comparison



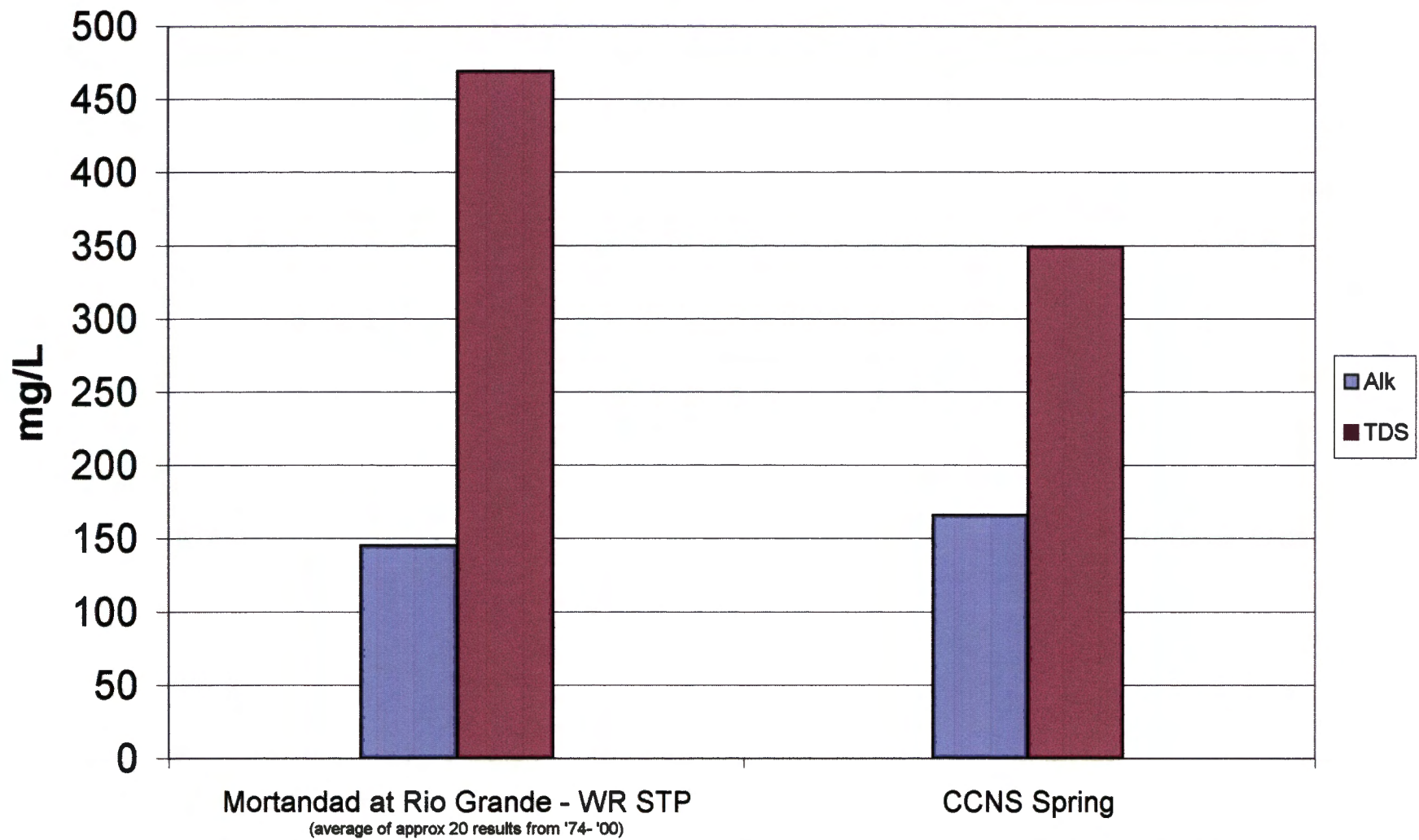
Alk/TDS Comparison



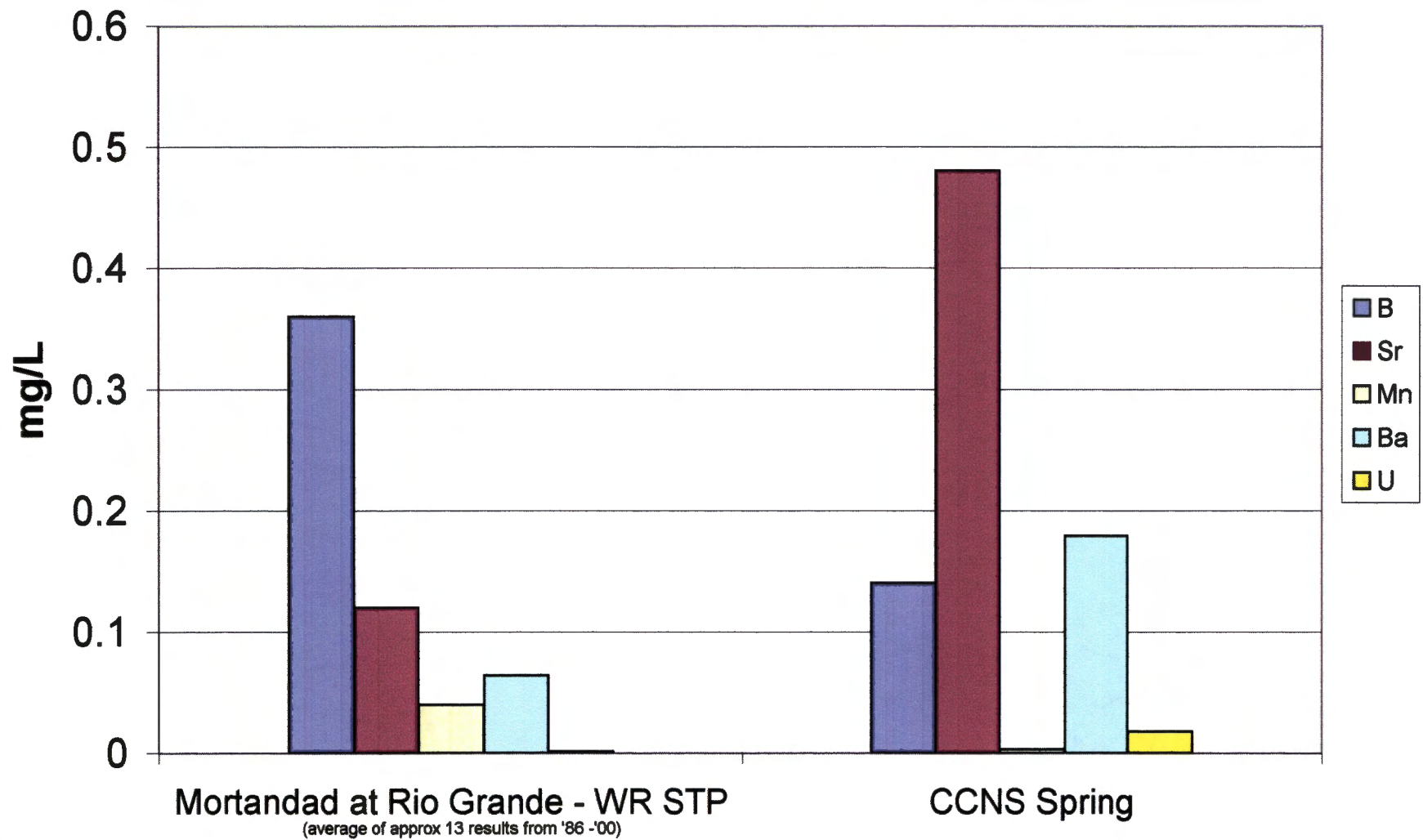




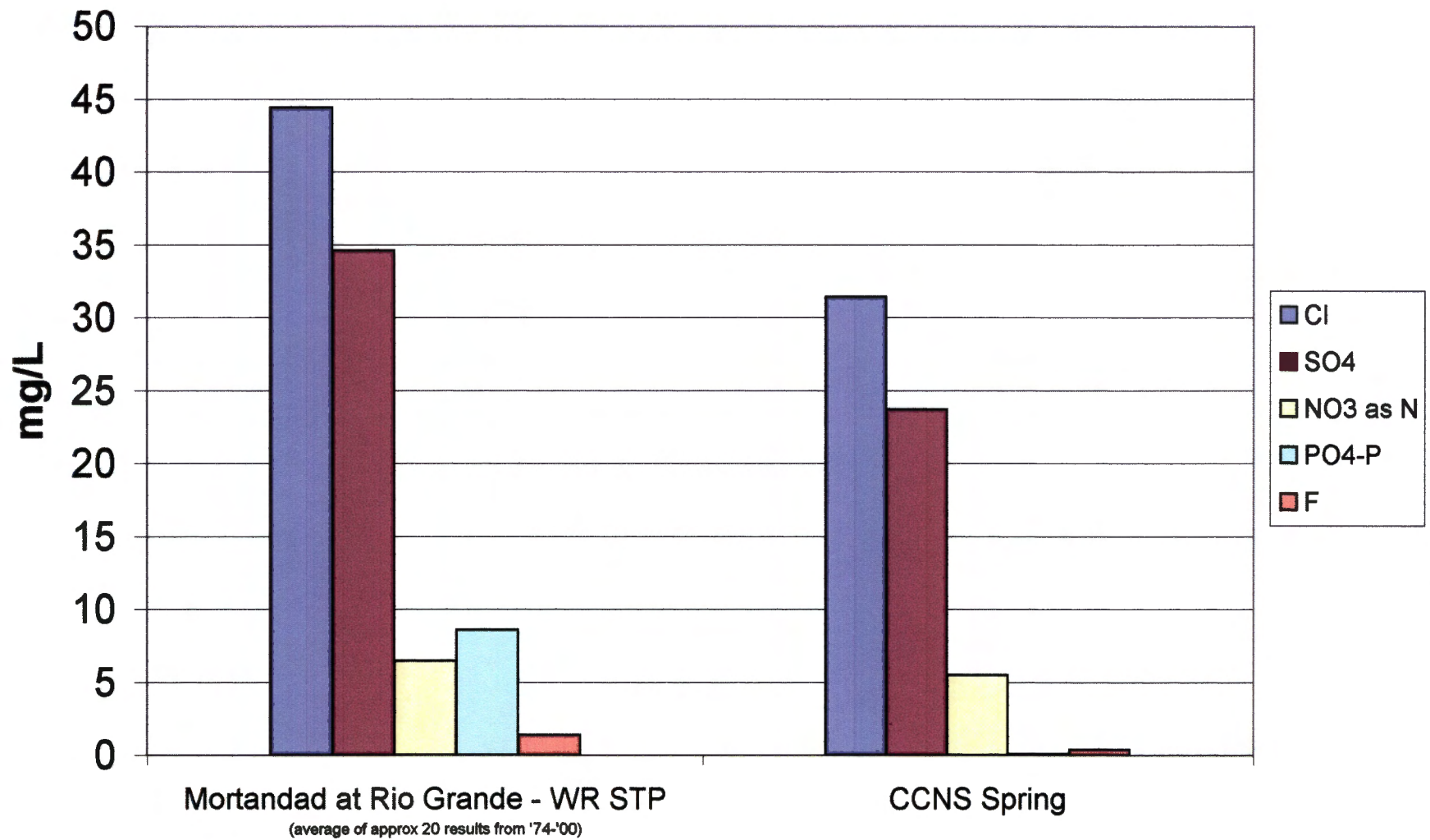
Alk/TDS Comparison



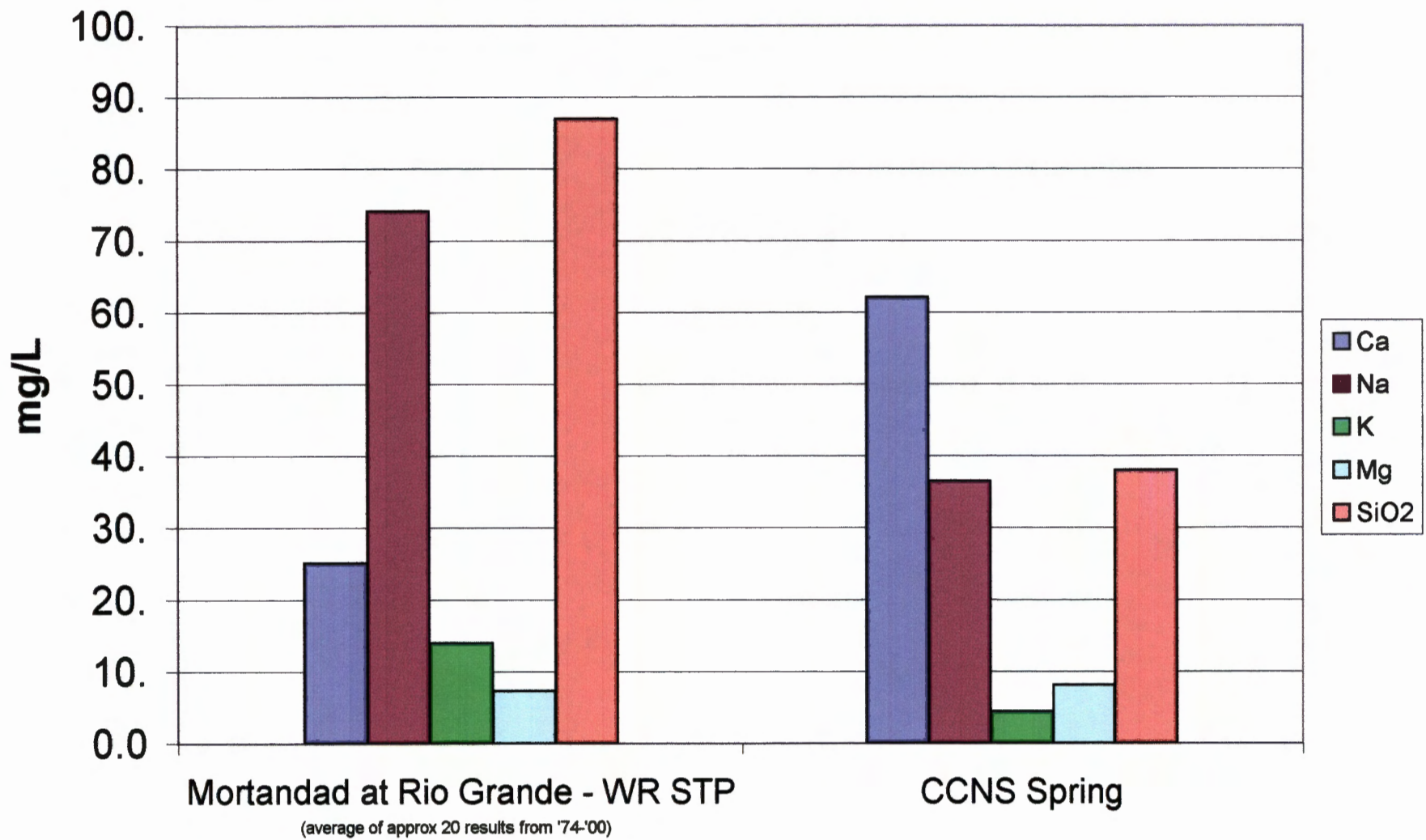
Trace Metal Comparison



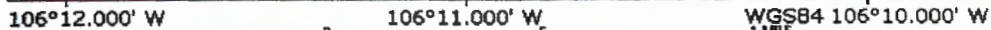
Anion Comparison



Cation/SiO₂ Comparison



| 106°12.000' W | 106°11.000' W | WGS84 106°10.000' W |
|---------------|---------------|---------------------|
|---------------|---------------|---------------------|



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